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ABSTRACT

Addressed to professional teacher educators or inservice administrators, this guide introduces a set of curriculum materials designed to train the potential vocational education curriculum specialist (VECS) according to identified competencies in the conceptualization, design, implementation, management, and evaluation of vocational-technical education curriculums. The guide briefly describes the history and development, purpose, organization, major features, and techniques for implementing the competency-based curriculum, which consists of 22 modules: 6 introductory modules to bring students with minimal preparation in vocational education to readiness for training in a core program; 15 core modules, which constitute specialization units in curriculum and program design, development, implementation, management, and evaluation; and an additional module containing two seminars and a field experience unit that provides opportunities for advanced professional application of the core competencies. The chapter headings of the guide are (1) The VECS Curriculum, (Development Cycle, Topics and Sequence, and Features of the Modules), (2) Administrative Considerations (Needs, Compatibility, Key Support, Initial Planning, and Installation), (3) Instructor Considerations (Instructional Strategies and Recommendations to the Instructor), and (4) Evaluation of the VECS (Institutional Level Evaluation, Instructional Level Evaluation, and Learning Experience Level Evaluation). The appendix briefly describes the content of each module followed by the goals and objectives on which the module is based. (HD)

ED132376 ●
VOCATIONAL EDUCATION CURRICULUM SPECIALIST

VECS

Installation Guide

INSTRUCTOR/ADMINISTRATOR GUIDE

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

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This document is one of a series of teaching/learning modules designed to train Vocational Education Curriculum Specialists. The titles of all individually available documents in this series appear below:

INTRODUCTORY MODULES

- ✓1. The Scope of Vocational Education
- ✓2. Roles of Vocational Educators in Curriculum Management
- ✓3. Current Trends in Vocational Education
4. Organization of Vocational Education
5. Legislative Mandates for Vocational Education
6. The Preparation of Vocational Educators

CORE MODULES

1. Important Differences Among Learners
2. Learning Processes and Outcomes
3. Applying Knowledge of Learning Processes and Outcomes to Instruction
4. Assessing Manpower Needs and Supply in Vocational Education
5. Laying the Groundwork for Vocational Education Curriculum Design
- ✓6. Selecting Instructional Strategies for Vocational Education
7. Derivation and Specification of Instructional Objectives
8. Development of Instructional Materials
9. Testing Instructional Objectives
10. Fiscal Management of Vocational Education Programs
11. Introducing and Maintaining Innovation
12. Managing Vocational Education Programs
13. Basic Concepts in Educational Evaluation
- ✓14. General Methods and Techniques of Educational Evaluation
15. Procedures for Conducting Evaluations of Vocational Education

SEMINARS AND FIELD EXPERIENCE MODULE

(Seminars in Authority Roles and the Curriculum Specialist in Vocational Education, and Leadership Styles and Functions of the Curriculum Specialist in Vocational Education; field work in Project Design and Administration, Operation of School Programs, Evaluation of School Programs, Educational Research and Development, and State, Regional, and Federal Program Supervision)

INSTALLATION GUIDE

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-Instructor/Administrator Guide-

INSTALLATION GUIDE

PREFACE

There has long been concern about the curriculum imbalance and fragmentation caused by the shifting demands and priorities placed upon vocational education during different periods of social crises. Many outstanding individuals throughout the entire field of vocational education have emphasized the need to provide training for vocational education curriculum specialists. The need for such specialization has been recognized not only among "curriculum workers," but also among vocational administrators, supervisors, department chairpersons, deans, instructors, and teachers. These professionals are very often called upon to provide vocational education curriculum expertise.

Although a sizable body of literature exists in the general field of vocational education curriculum development, there have been few attempts to compile and synthesize this information for ready and flexible use by the professional teacher educator or the inservice administrator. The VECS materials represent one approach toward filling this gap. The materials are specifically designed to train the potential curriculum specialist according to identified competencies in the conceptualization, design, implementation, management, and evaluation of vocational-technical education curricula.

The information which appears in this guide is by no means exhaustive, nor is it meant to be prescriptive. The work presented here, hopefully, will help the user apply the VECS materials to train vocational education curriculum specialists. More specifically, this installation guide will help the user to

- understand the background of the VECS materials;
- determine the compatibility of the VECS materials to existing program goals;
- decide when and how to use the VECS materials; and
- evaluate the effectiveness of the VECS materials.

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The Vocational Education Curriculum Specialist Project was a comprehensive development and evaluation effort involving the contribution of a large number of people: project staff, curriculum consultants, a national advisory panel, and a number of cooperating colleges and universities. This wide variety of valuable inputs makes it difficult to accurately credit ideas, techniques, suggestions, and contributions to their originators.

The members of the National Advisory Panel, listed below, were most helpful in their advice, suggestions, and criticisms.

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California State University, Long Beach
California Polytechnic State University, San Luis Obispo
Consortium of California State University and Colleges

- California State University, Sacramento
- California State University, San Diego
- California State University, San Francisco
- California State University, San Jose
- California State University, Los Angeles

Iowa State University
University of California Los Angeles
University of Northern Colorado

Overall responsibility for the direction and quality of the project rested with James A. Dunn, Principal Investigator. Project management, supervision, and coordination were under the direction of John E. Bowers, Project Director.

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OVERVIEW

The Vocational Education Curriculum Specialist (VECS) project, conducted within the Developmental Systems Group of the American Institutes for Research, was sponsored by the Bureau of Occupational and Adult Education of the U. S. Office of Education under Part I - Curriculum Development in Vocational and Technical Education, Vocational Education Amendments of 1968.

The purpose of this project was to design and develop a university advanced-level program to train vocational education curriculum specialists. VECS products are a comprehensive, competency-based curriculum plan, instructional materials, and an installation guide. The installation guide was developed to assist potential university and other users in implementing the VECS curriculum as part of new or ongoing vocational education programs. The guide is designed primarily for the instructor's and administrator's use in learning more about the VECS materials and their potential application in different educational settings. A brief history of development of the VECS materials has been provided along with an explanation of their purpose, organization, and major features. Appendix A briefly describes the content of each module, followed by the goals and objectives upon which the module is based.

The competency-based VECS curriculum consists of learning units or modules. Six introductory modules were developed to bring students with minimal preparation in vocational education to readiness for training in a core program. Fifteen core modules constitute specialization units in curriculum and program design, development, implementation, management, and evaluation. An additional module containing two seminars and a field experience unit provides opportunities for advanced professional application of the core competencies.

Goals and objectives are developed for each module, and the lesson plan, learning activities, self-study exercises, references, and assessments are coordinated with the objectives within each module. The curriculum materials

are adaptable to variable credit award and to different entry-level student skills. A module test option is provided to enable more advanced students to obtain credit by examination.

The VECS curriculum plan and materials were developed on the basis of a revision sequence including the original proposed curriculum outline; consultants; reviews by a National Advisory Panel; external panel review; a workshop by practicing administrators, teachers, and curriculum personnel; and a third-party field test conducted by the Far West Laboratory for Educational Research and Development.

Critical characteristics affecting the adoption and use of a VECS curriculum were identified early in the project through a survey of twenty-two institutions in the forefront of vocational education. A very brief condensation of this survey indicated the following:

- The majority of institutions surveyed felt a smaller unit, modularized approach was the best implementation format since it allows decisions for use between an instructor and a department chairman. A decision to implement at the course or program level is far more time consuming since these involve typically a hierarchy of committee approvals. An institution wishing to install a curriculum emphasis in an existing program would find the VECS materials among the easiest to install due to the curriculum competency base and its built-in evaluation of student outcomes.
- Using the most willing faculty member to initiate the use of a module or a series of modules was determined by most administrators to facilitate installation. Conducting a needs assessment among faculty and students for needed competencies, classes, and programs was also seen as an effective approach for installing new or supplementary programs and materials.
- Interest in and the need for curriculum competencies has long been recognized by vocational education personnel in teacher education and administrator programs across occupational program areas.
- Materials requiring a minimal amount of inservice training were perceived as most desirable, which emphasizes the need for the installation guide.
- The compatibility of the VECS curriculum could be determined by an analysis of its goals and objectives and the scope and function of existing courses in which it would be used. Institutions want to avoid duplication; they desire programs that further institutional or departmental roles and objectives. The modules would have to relate to mission and goal statements.

- The VECS program must satisfy credentialing or experience requirements for curriculum specialists in vocational education. While there are no established credentialing requirements now, many states require more than five years' experience for directors and supervisors.

Dissemination, implementation, and utilization of the VECS program were key objectives of the project. Newsletters, brochures, and professional presentations were designed to bring awareness of the VECS curriculum to potential users. The installation guide is the major implementation vehicle for describing the VECS program, for providing an overview of roles and settings in which a vocational education curriculum specialist might operate, and for identifying institutional features that affect vocational education.

This guide for the installation of the VECS curriculum materials is not a prescriptive set of rules to be followed by administrators and instructors. It is designed instead to provide a brief background of the basis for the curriculum and its elements so that the potential user can decide how existing program needs can be met by installing the VECS curriculum.

Every training program at all levels has unique missions and goals. The VECS curriculum was designed to be adoptable and compatible within a variety of institutional and instructional settings; to be adaptable to the training of students with differing entry-level skills; to be conformable with a variety of instructional methods; and to be usefully adopted in whole or in part within existing programs.

Installation of a new curriculum or its components involves both administrative and instructional considerations. Consequently the organization of the guide that follows will first describe the VECS curriculum, then address those factors of importance to administrators and instructors when considering its implementation.

THE VECS CURRICULUM

Development Cycle. The VECS curriculum was designed and created through a formative development-evaluation cycle of activities that included:

- Expert consultants.
- University staff reviews.
- Surveys of institutions leading in the field of vocational education and of vocational administrators and curriculum professionals.
- Reviews by an AIR Curriculum Panel.
- Reviews by a National Advisory Panel representing government, vocational education, labor, industry, curriculum, and professional organizations.
- Pilot testing by AIR throughout the development of the VECS curriculum.
- Third-party field evaluation by the Far West Laboratory for Educational Research and Development. Field test sites for the third-party evaluation included the following universities:

California State University, Long Beach
California State University, Sacramento
Iowa State University
San Jose State University
University of California, Los Angeles
University of Northern Colorado

As the competency base and the curriculum plan were defined, the content structure of the VECS curriculum was shaped, and the organization and format for the instructional modules were designed through evaluation by consultants and panels, through pilot testing, and through the external third-party field test.

Final revisions of the modules were based on the findings of the external third-party field test. A brief discussion of the field test findings and corresponding revision activities and other AIR responses to the field test findings are provided in the following paragraphs.

The most frequent student criticism of the VECS field test materials was that the format (Instructor's Guide, Student's Guide, and Selected Readings) was difficult to use and follow and that a clear outline and synthesis of a wide range of materials did not prevail.

In response to this finding, AIR revision staff collapsed the separate guides into a single study guide emphasizing use of a content outline to pro-

vide adequate coverage of the subject matter. The content outline in each module represents a minimal but substantive synthesis of available information on a specific aspect of vocational education curriculum. Many additional references, resources, and activities are suggested for student and instructor use beyond that provided in the content outline. A complete description of the module format is given on page 6 under "Features of the Modules" later in this section.

In several field test situations, students were highly critical of the way the modules were introduced and used. Students felt they were "add ons" to an already full schedule and that instructor support was lacking in terms of an orientation to the materials and integration of the materials into existing course work. This significant finding points out the necessity for instructor understanding of and "know how" in using the VECS materials. This installation guide is designed to assist the instructor in these endeavors. The instructor must become familiar with all parts of the VECS modules in order to use them to his/her advantage. Practical application of the subject matter contained in the VECS modules is best achieved through the instructor's leadership and interest in his/her own students. Two sections in this installation guide are specifically directed to helping instructors implement the VECS materials--INSTRUCTOR CONSIDERATIONS and Recommendations to the Instructor.

The field test findings further indicated that the VECS materials were:

- recognized as valuable resources by the majority of instructors;
- received most favorably by advanced students below the Ph.D. level;
- rated more positively by students when instructors provided input, used group activities and discussion questions, or used the modules to help students achieve already existing course goals.

There is one final point that should not be overlooked in the revision process. This is the tremendous advantage the AIR VECS project has had in developing the materials at the same time that the Master of Arts in Vocational Education (MAVE) external degree program of the Chancellor's Office of the California Consortium of State University and Colleges was beginning its operation. The new MAVE program needed instructional materials which AIR was able to provide in return for pilot testing sites and continuous

feedback regarding the VECS materials. This cooperative situation proved to be a most positive contribution to the VECS project during the formative development of the materials.

This development cycle resulted in a set of instructional materials including six introductory modules for students with minimal vocational education preparation in the foundations of vocational curriculum, and fifteen core modules emphasizing more specific aspects of vocational education curriculum, and an advanced module organized as seminars and practicum field experiences. Titles for all modules are shown in Figure 1.

Topics and Sequence. Each module of the VECS curriculum deals with one or two aspects of vocational curriculum conceptualization, development, implementation, management, and evaluation. The sequence for using the modules is not necessarily directed by the module number, but rather by the desired topic or goals and objectives. For example, Introductory Modules 3, 4, and 5 emphasize the impact of legislation and organizational structure on vocational curriculum development, while Introductory Modules 1, 2, and 6 are more concerned with basic pedagogical concepts related to the practical development of curriculum and curriculum management. Among the Core Modules, some emphasize instructional theory as it relates to curriculum, while others emphasize the actual development or evaluation of curriculum.

The best way to select the sequencing of modules is to first determine overall program goals and objectives, and then evaluate VECS compatibility with these goals. The goals and objectives and a brief description for each of the VECS modules are provided in Appendix A.

Features of the Modules. The modules are contained in individual study guides. The study guide has five major sections; each is described as follows:

- **Organization and Administration**

This section tells how the study guide is organized; what reference materials will be needed by students as well as a suggested bibliography of materials that will be helpful to the student; the purpose of the particular module and why it is relevant to a vocational curriculum worker; and what specific competencies the module emphasizes in terms of student outcomes.

Figure 1
VECS TITLES

INTRODUCTORY MODULES

- 1 The Scope of Vocational Education
- 2 Roles of Vocational Educators in Curriculum Management
- 3 Current Trends in Vocational Education
- 4 Organization of Vocational Education
- 5 Legislative Mandates for Vocational Education
- 6 The Preparation of Vocational Educators

CORE MODULES

- 1 Important Aspects of the Learner
- 2 Learning Processes and Outcomes
- 3 Applying Knowledge of Learning Processes and Outcomes to Instruction
- 4 Assessing Manpower Needs and Supply in Vocational Education
- 5 Laying the Groundwork for Vocational Education Curriculum Design
- 6 Selecting Instructional Strategies for Vocational Education
- 7 Derivation and Specification of Instructional Objectives
- 8 Development of Instructional Materials
- 9 Testing Instructional Objectives
- 10 Fiscal Management of Vocational Education Programs
- 11 Introducing and Maintaining Innovation
- 12 Managing Vocational Education Programs
- 13 Basic Concepts in Educational Evaluation
- 14 General Methods and Techniques of Educational Evaluation
- 15 Procedures for Conducting Evaluations of Vocational Education

SEMINARS AND FIELD EXPERIENCE MODULE

Seminars in 1) Authority Roles and the Curriculum Specialist in Vocational Education; 2) Leadership Styles and Functions of the Curriculum Specialist in Vocational Education. Field work in 1) Project Design and Administration; 2) Operation of School Programs; 3) Evaluation of School Programs; 4) Educational Research and Development; 5) State, Regional, and Federal Program Supervision.

- **Content and Study Activities**

This section provides a synthesis and analysis of concepts and information related to the goals and objectives of the module. This section provides the basic content of the module in outline form. The content outline provides the student with sufficient information to complete all of the learning activities in the study guide, enabling the student to achieve the required competencies of a particular module.

This section also contains learning activities which are related to each goal area of the module.

- **Group and Classroom Activities**

This section includes all suggested activities for the classroom or for small groups outside the classroom. These activities are keyed to the content outline in order to indicate the most appropriate time for participation. They could, however, be used at the discretion of the instructor any time during the module.

The second part of this section consists of discussion questions with suggested responses. As with the classroom activities, the discussion questions are keyed to related material in the content outline. The instructor may wish to use them to stimulate student summarization and synthesis of the module or a particular section of the module.

- **Student Self-Check**

Part four of the study guide provides questions the student may use to check his knowledge and understanding of the module. The instructor may wish to assign the self-check or selected items on the self-check as an assessment instrument. The questions are directly derived from the goals and objectives of the module.

- **Appendices**

Appendix A, in the last part of the study guide, includes the suggested responses to all student learning activities. Students may use the responses to check or compare their own answers. Appendix B contains the suggested responses to the Student Self-Check.

Figure 2 on the following page illustrates the major components of the study guide.

Figure 2
STUDY GUIDE COMPONENTS

STUDY GUIDE
(Teaching/Learning Module)

Part I: Module Organization and Administration

- Guidelines for use of the module
- Overview and rationale
- Educational goals and performance objectives
- Recommended learning materials

Part II: Content and Study Activities (organized for each goal)

- Introduction
- Content outline
- Student learning activities

Part III: Group and Classroom Activities (organized for each goal)

- Activities
- Discussion questions

Part IV: Student Self-Check

- Knowledge assessment
- Performance assessment

Part V: Appendices

- Responses to student learning activities
- Responses to student self-check

ADMINISTRATIVE CONSIDERATIONS

The "development cycle" of the VECS materials described in the previous section not only resulted in a set of instructional materials, but also in a comprehensive program plan creating a number of advantages which administrators may wish to consider as they view the VECS materials.

- VECS provides a total system for a vocational education program. The curriculum consists of general concepts, objectives, scope and sequence, instructional materials, the installation guide, and support materials based on identified and documented competencies in vocational education curriculum.
- Stated goals and objectives allow for easy analysis of the curriculum in relation to its compatibility with departmental and institutional missions, goals, and objectives.
- The VECS materials can be used in a variety of settings allowing for instructor creativity and flexibility.
- The VECS modules can be used as inservice topics and activities for professional growth and development.
- The curriculum is designed for the master's level vocational education student and is also appropriate for advanced undergraduate students in vocational teacher education.
- The curriculum has a built-in evaluation system which can be translated into an accountability plan.

The remainder of this section provides the administrator with additional items to consider before and after making a decision to adopt or adapt the VECS materials. These important considerations are presented within the framework of a suggested implementation process including 1) an analysis of current program needs and VECS characteristics; 2) development of a compatibility checklist; 3) utilization of key staff members; 4) initial program planning; and finally 5) actual installation of the program.

Needs. The questions listed below can be used effectively by administrators wishing to analyze their program needs in relation to the VECS curriculum.

- 1) What are the perceived priority rankings of vocational education goals and objectives by representative staff, advisory groups, and students?
- 2) What are the perceived current and desired levels of performance and achievement of the vocational education goals expressed by professional staff?

- 3) What are the perceived current and desired levels of performance and achievement of vocational education goals expressed by representative advisory groups?
- 4) What are the perceived current and desired levels of performance and achievement of vocational education goals expressed by students?
- 5) What discrepancies exist between perceived and desired performance and achievement? These determine program needs.
- 6) Are the needs of the existing program translated into objectives and curriculum?
- 7) How do the educational goals and performance objectives of the VECS curriculum relate to specific program needs?
- 8) How do the resources, content, activities, and assessment plan of the VECS curriculum relate to identified needs for curriculum?

Compatibility. Once the administrator views VECS as a vehicle to improve the programs for which he is responsible, he or she should list its perceived advantages and disadvantages. In other words, the compatibility of the VECS curriculum should be estimated. Compatibility checks are made with respect to the institutional mission, departmental objectives, acceptance by the administrative and instructional staff, as well as students, and its adaptability to other programs.

Key Support. Key support staff for installing the VECS materials then need to be identified. These may be administrators or instructors both within or outside of the department who are the "gatekeepers," who are the opinion leaders in the organization, and who will be influential in securing the endorsement of others.

Initial Planning. Initial planning is now ready to begin. This will involve the consideration of general matters to be reviewed by the administrator and key support staff.

- Methods to contact and organize planning sessions with key support staff.
- Methods to distribute VECS information to key support staff.
- Review of the VECS curriculum by the planning group.
- Examination of needs and VECS compatibility with existing programs; consideration of institutional organization and structures.
- Determine possible options for use.
- Examine existing instructional material and coursework approval mechanisms.

- Consider institutional and staffing factors related to student enrollments, administrative and staff needs, library and space facilities, materials availability, and costs.
- Examine needs for inservice training.
- Determine plans for disseminating information about the VECS curriculum to administrators, staff, and students.

While these are general factors to be discussed, it is important to stress that each institution will have specific problems to solve. Based upon the overall conclusions arrived at, the decisions to be made at this point are to proceed or not with the detailed planning of an installation strategy.

Installation. At this stage, the decision has been made to install the VECS curriculum. Each of the factors considered during the initial planning needs to be expanded and elaborated upon. Administrative leadership is called upon to guide the implementation that is unique to each institution. Major activities are:

- Justify the Implementation. Recognizing that change is difficult and often resisted, the administrator must defend his or her decision to introduce a new curriculum. Materials may need to be prepared, faculty meetings scheduled, committee agenda items developed.
- Determine Options for Infusing VECS. The VECS curriculum has been introduced in a variety of institutional programs, including its implementation at the module level in single courses, at the course level in departments, at the program level, and at the degree level. Each institution will need to determine options for introducing VECS at the minicourse, course, department, division, or college level. Each of these options typically involve group decision making, and as the level of infusion rises, decision time for approval lengthens. Real decision time for approval must be estimated.
- Develop Modes of Implementation. Activities in this area will specify credit hours to be awarded for the various VECS units; schedules; whether the VECS materials are to be added to existing programs, to be substituted for present curricula, or to be introduced as a new program. Each of these modes may or may not require interdepartmental agreements with respect to staffing patterns. These decisions in turn may or may not require inservice training.
- Develop Methods for Obtaining Faculty Support. The VECS materials will need faculty review and endorsement. The key support staff identified earlier can be valuable in assisting the administrator who must lead this effort. The most difficult matter to face is that of providing incentives for effective use of the VECS curriculum. Novelty wears thin, so continued attention to the question of faculty support needs to be given until the VECS curriculum is established.
- Plan a Campaign of Student Awareness. Sufficient lead time must be given to make students familiar with the new materials. At most institutions a catalog describes the content offered in all courses.

Prior to that, however, it is certainly desirable to provide students with VECS information and perhaps engage them in this awareness campaign. Brochures, student newspapers, and VECS descriptive materials are useful and effective. For both faculty and student dissemination, the section in this guide under Advantages of VECS may be useful.

- Estimate Enrollments. As every administrator knows, departmental productivity is measured, among other variables, by student clock hours. A new course offering must be defensible in terms of student enrollments. In estimating student enrollments, methods for "recruiting" students may need to be considered; student demand would then be a function of the effectiveness of the dissemination campaign discussed above. Enrollments will also vary as a function of the VECS curriculum's articulation with other courses and programs, and student entry-level skills. Since VECS is a competency-based system to train curriculum specialists, student demand should be matched with the real-world needs for these skills. This will include articulation with the state educational agency, with district vocational educators, with business and industry, with other agency training directors, and perhaps with other universities.
- Monitoring the Implementation. An evaluation plan is essential for judging the effectiveness and acceptability of the VECS implementation. There is no single implementation plan that is applicable everywhere. Consequently, each institution must develop criteria to measure outcomes for each of the activities discussed above. Evaluation can be carried out at the administrative level, at the instructional level, and at the student level. Evaluation can rely on professional judgments, student and faculty attitude measures, learning outcome assessments, or whatever other methods that provide information relating to the adaptation of the VECS curriculum to the needs of the local institution.

INSTRUCTOR CONSIDERATIONS

The extensive pilot testing and the third-party field testing of the VECS materials ultimately pointed out a number of advantages clearly associated with the use of the VECS materials which instructors may wish to consider as they view the VECS materials for their own uses.

- The VECS curriculum has synthesized a significant amount of material and information into a concise content outline with associated individual and group activities.
- The materials allow for maximum instructor options by providing for both classroom involvement and independent study. The instructor has complete control over the degree and type of involvement for self and student.
- The materials have the capacity to provide immediate feedback to students.
- VECS can be adopted as a total program or as interrelated pieces of an existing program.
- The resource materials used to develop VECS provide a comprehensive reference guide for vocational education curriculum conception, development, management, installation, and evaluation.
- The VECS approach allows for individual rates of learning, interests, and levels of achievement.
- The students know what they are expected to achieve and what is required from them.
- The VECS resources eliminate the necessity of purchasing many costly texts.
- Each module provides ideas, suggestions, and resources for many different activities.
- Students emerge with specific competencies in vocational education curriculum design, management, and evaluation.

The remainder of this section describes 1) the different instructional strategies and settings compatible with the VECS materials, and 2) specific recommendations to the instructor regarding program planning and student recruitment.

Instructional Strategies. Alternative suggestions for teaching with the VECS materials include how to use the VECS materials in a relatively traditional classroom setting, in a seminar or small-group situation, in a team teaching approach, in an independent study situation, and as supplementary content and activities for an already established program.

1) Independent Study. The VECS materials were designed to be sufficiently self-contained for use in advanced programs that utilize individualized instruction. The VECS materials contain the following elements which generally characterize individualized instruction:

- The objectives of the lesson are clearly stated so that the student knows what he or she is to learn.
- The student is an active learner rather than a passive receiver.
- The instructor is a learning manager and consultant for the student rather than a dispenser of knowledge.
- The students have an opportunity to test their knowledge or skills and receive an immediate confirmation or correction.
- The emphasis is placed upon self-evaluation for the individual student rather than competition with other students.
- The student manages his learning process. He has a choice of activities, learning materials, and schedules his own rate of learning.

The VECS modules contain the essential elements of individualized learning materials including:

- Titles and other identification/description material so that main parts and subparts, activities, study, and test materials are distinguishable.
- Pre-test. The purpose of the "Student Self-Check" is to allow the student to test his knowledge of the subject at any time he wishes to do so. If the "student self-check" is formally administered by the instructor, most individualized instruction packages allow the student to skip the lesson (module) if he or she achieves 80 to 100 percent criterion. This is an instructor's option with the VECS materials.
- Introduction or overview. The purpose of the "overview and rationale" is to tie each module to the others and to give reasons why the student needs to learn the material.
- Objectives. These are educational goals and objectives which indicate exactly what the student is to learn.
- Activities. The student learning activities are the instructional portion of the module when used in individualized instruction. The student is given a reading assignment or reading material, sometimes a brief research or other individual project, supplied with additional information for study resources and asked to complete a series of exercises which have answers immediately available so that the students can evaluate themselves on how much or how well they are learning.
- Post-test. The student self-check may be used as a post-test or the instructor may wish to select only parts of the check to use as a final evaluation. It may also be presented orally so that students respond directly to the instructor, to a small group, or to the entire class. The test may be sufficiently modified by the instructor as an essay examination where the student may respond more subjectively.

2) Team Approach. The VECS modules are well suited to a team teaching approach in both the general and strict sense of the term. Minimum team teaching might be described as two or more instructors dividing the content of the material to be taught to the class, each instructor working autonomously with the same student body, each selecting individual teaching methods, texts, and evaluation devices.

In this type of team setting, instructors would select their specific VECS modules and use them according to their own teaching styles.

Maximum team teaching might be described as two or more instructors providing completely complementary instructional materials and approaches, capitalizing on their own specialties with unified and coordinated presentations and evaluations. One team approach using the VECS materials is illustrated in Figure 3 and includes three different levels of involvement in the total team program: 1) the institutional or departmental policy, decision-making committee; 2) instructional coordination and improvement committee; 3) instructional teams.

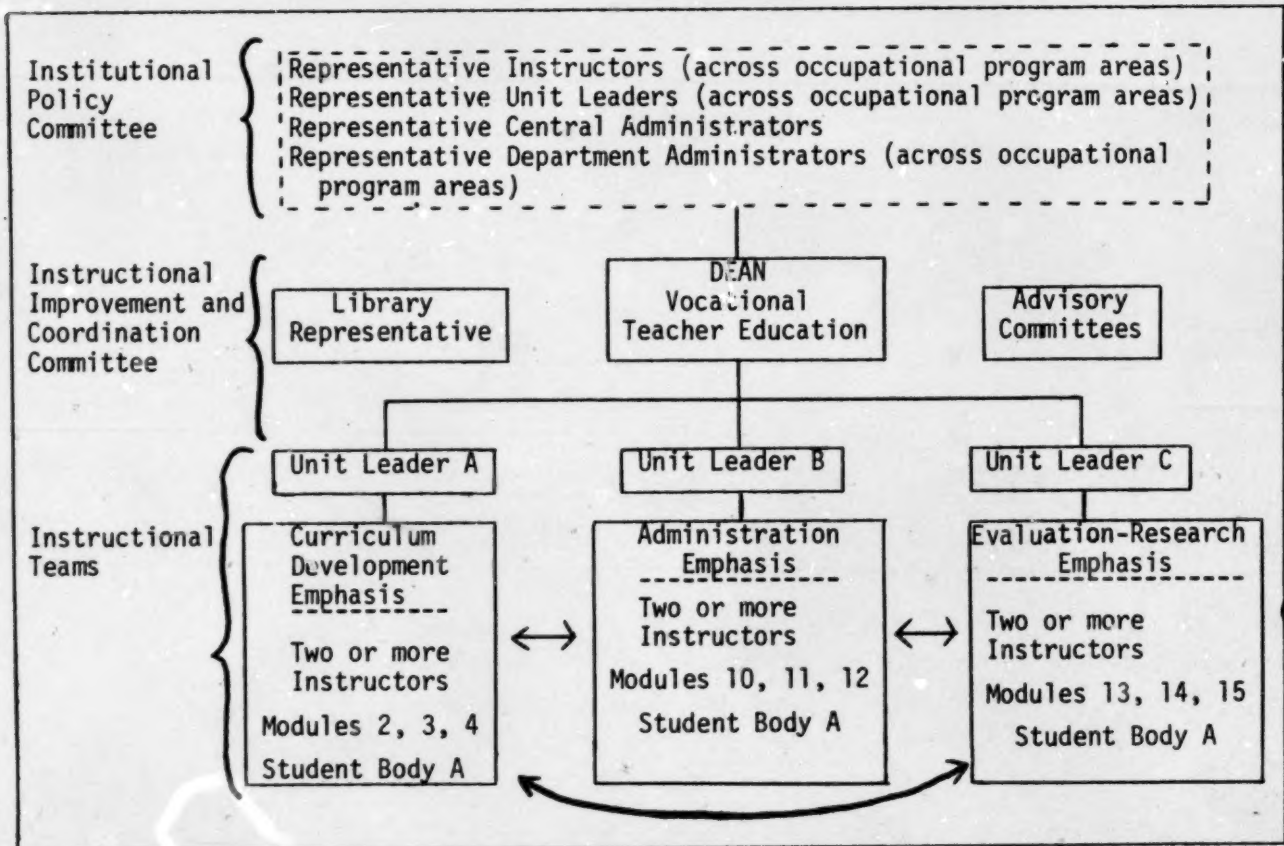
3) Seminar Approach. The VECS modules can be used effectively with small groups of students engaged in research or study of curriculum problems and issues under the general direction of one or more discussion leaders.

The group activities, discussion questions, student learning activities, and reference material contained in each module lend themselves very easily to this approach.

Because the modules contain well-defined objectives, directions, sufficient resource material, and abundant information for additional resources, the instructor may wish to appoint a student responsible for the teaching and discussion of the content or highlights of a single module. In this manner many different modules might be covered in one seminar.

4) Large Group Traditional Classroom Approach. When large groups of students or budgetary constraints place restrictions on the availability of materials and instructional approaches or in situations where the "lecture method" is preferred, the VECS modules may be used as an instructor content outline for lectures and subsequent student activities. The instructor may provide all necessary infor-

Figure 3
VECS TEAM APPROACH



mation and experiences to students without supplying students with copies of the modules. In this fashion, the instructor would base the lectures on the content outline and make student assignments based on the student learning activities or the classroom activities. Final examination might be based on the student self-check. Suggestions for additional student credit or individual projects are supplied in the module wrap-up activities.

5) Contract Approach. The contract approach to instructional management is a method of teaching the individual student within a large or small group by allowing for individual levels of attainment, interest and taste, and individual rates of learning. It may be used in conjunction with any of the previously mentioned approaches. The contract approach generally contains the following elements:

- The contract specifies student objectives, student activities including utilization of reference materials, and methods of student evaluation.
- The contract is cooperatively developed between instructor and student with minimum requirement loads clearly specified by the instructor prior to its development.
- Broad time frames are usually desirable with check points along the way.
- Both student and instructor should have copies of the contract.
- Instructor may develop several different contracts which students may select and make some individual changes.

Figure 4 provides an example of contract learning.

6) Supplementary Approach. An established vocational education program that plans to emphasize skills in curriculum conceptualization, development, implementation, management, and evaluation will find an abundant resource in the VECS materials. To a large extent, the real value of using the VECS materials as a core curriculum or as supplementary materials to an existing core is the synthesis of many resources that the content outline brings to the above mentioned areas and extensive bibliography contained on each topic. This is a facilitating resource to both student and staff.

Figure 4
EXAMPLE OF CONTRACT LEARNING

CONTRACT: VE 510 CURRICULUM DEVELOPMENT

DEVELOPED BY J. Jones (student) and R. Poff (instructor)

September 1, 1976

Objectives

1. Conduct a preliminary investigation for the development of a new vocational education curriculum
2. Complete a program proposal
3. Understand and implement a planning process for vocational education curriculum development.

Activities

1. Complete a preliminary investigation in my school based on Outline and activities in Module 5
2. Write and present a program proposal using the procedures and model provided in Module 5
3. Complete all learning activities and student self-check in Module 5. Attend all class sessions

Completion Dates

Activity 1 - May 3, 1976

Activity 2 - May 20, 1976

Activity 3 - May 20, 1976

Evaluation Method

1. Quality of preliminary investigation (rated by instructor)
2. Quality of program proposal (rated by instructor, advisory committee, and class committee)
3. Completion of student self-check and all learning activities in Module 5 to instructor's satisfaction

Recommendations to the Instructor

1) Planning Steps. The VECS modules are easy and flexible to use if the instructor:

- Reads the materials prior to use.
- Is familiar with the essential features of the modules and their purpose in the instructional process; briefly, these include:
 - Table of Contents
 - Guidelines
 - Overview and Rationale
 - Educational Goals and Performance Objectives
 - Recommended and Suggested Resources
 - Content Outline
 - Student Learning Activities
 - Group and Classroom Activities
 - Discussion Questions
 - Student Self-Check
 - Answers
- Determines the sequence and teaching methodology for the modules.
- Develops a plan prior to the use of each module which states 1) the activities that need to be completed; 2) the procedure for completing the activity; 3) a specified date for completion of the activity; and 4) the person responsible for completing the activity. See Figure 5 for an illustrated example of this plan.

2) Recruiting Students. Instructors who are interested in recruiting students for classes utilizing the VECS materials will find the following guidelines helpful:

- The introductory modules are particularly appropriate for advanced undergraduate students in the vocational teacher/counselor preparation program.
- The introductory modules are also appropriate for graduate-level students of the Master's level who have had minimal vocational education experiences.
- The core modules are appropriate for graduate students at the Master's level who are specializing in vocational education curriculum, instruction, or administration.
- A student recruitment plan should be carefully developed and should include:
 - Distribution of information and materials to potential students.
 - A plan for allowing credit by examination.
 - A plan for allowing independent study.
 - Development of follow-up materials for interested students.

Figure 5
PLAN FOR MODULE UTILIZATION

1. <u>Task</u>	2. <u>Procedure</u>	3. <u>Completed Date</u>	4. <u>Person Responsible</u>
Collect recommended reference material Module 1, p. 4	Call resource section of library. Collect and place materials on reserve.	11/2/76	Instructor
Get copy of state vocational plan (5 year)	Call State Director for Vocational and Technical Education for a state plan and other available material.	11/10/76	Instructor
Prepare overhead masters showing 1) characteristics of vocational education students; 2) financing of vocational education programs; 3) state organizational chart for administering vocational education.	Provide rough draft of overhead masters to AV department. Request overheads by 11/20/76.	11/10/76	Instructor AV Department
⋮	⋮	⋮	⋮

EVALUATION OF THE VECS

This evaluation plan will provide potential users of the VECS program with a guide to monitor the implementation of the program and to assess its effectiveness. It is not a detailed plan, as each institutional setting has unique evaluation requirements. The VECS curriculum may be evaluated at three levels.

- Institutional level--by universities and colleges, state departments of education, local schools, professional organizations, or other adopting institutions.
- Instructional level--by instructors.
- Learning experience level--by students and instructors.

The questions introduced at the various levels are illustrative and should be added to and refined as necessary.

Institutional Level Evaluation. Institutional level evaluation applies to the training institution or inservice training setting in which VECS has been installed. Evaluation at this level is done to assess the characteristics of the VECS curriculum to determine whether it meets institutional needs. Evaluation questions regarding the VECS should include its adequacy, compatibility, acceptability, and cost effectiveness.

Users who have implemented the VECS curriculum need to ask the following general kinds of questions:

- Is the institution more effectively training the needed vocational education curriculum specialists?
- Are the VECS goals and objectives sufficiently comprehensive?
- Has the VECS curriculum compensated for the needs identified prior to its installation?
- What evidence exists regarding the efficiency and effectiveness of the VECS curriculum?
- Is the VECS curriculum sufficiently flexible, or must it be modified?
- Is the program implemented using available resources?
- Can students with varied vocational backgrounds effectively use the curriculum?
- What are the relative implementation costs of the program? Do other comparable programs exist that may be more cost effective?
- How is program effectiveness and adaptability viewed by those involved in the daily management of the program?

- Do the program materials assist the user to install, manage, implement, and evaluate the program?

Sources of information for the institutional level evaluation include administrators, department heads, instructors, and all others who would be involved in the installation, management, implementation, and local evaluation of the VECS. Means of collecting information to answer the questions asked may include both formal and informal methods. Typical procedures for collecting information might include interviews, formal or informal group discussions, telephone conversations, and attitude questionnaires.

Instructional Level Evaluation. Evaluation at this level involves assessment of the adequacy of the program at the instructional level. Evaluation considerations at this level determine how well the program works. Instructional evaluation specifically addresses itself to the viability of the VECS competency base, organization, consistency, completeness, usability and usefulness, adaptability, and overall effectiveness and instructional impact. After initial use of the VECS materials, users need to ask the following general kinds of questions:

- Is the competency base of the curriculum well-defined and clearly delineated? Does it encompass institutional goals and needs?
- Is there a sound relationship and a logical progression from the general competency base to the goals and objectives of the instructional modules?
- Are learning activities and objectives logically related?
- Is there consistency across modules regarding organization, sequencing, and levels of difficulty?
- Do stated goals and objectives represent a comprehensive program in terms of the needs of the institution?
- Are curriculum materials suitable for use as is, or should they be modified?
- Do curriculum materials allow for individual teaching and learning styles?
- Does the curriculum provide for learning in the context in which skills will be used? Does it allow for practice and application of skills?
- What reactions do students have toward the materials?
- Is the curriculum adaptable to different entry-level skills?

Please note that the above questions can be asked in regard to both the entire VECS curriculum and individual modules. Pertinent evaluation questions which might be asked after longer use of the VECS curriculum include:

- Are students successful in finding employment for which they were trained? If not, why not?
- If students can find jobs for which they were trained but choose not to, what is the basis of their decisions?
- Does the VECS meet graduates' on-the-job needs?
- Do employers find the knowledge, attitudes, and skills of the program graduates adequate?

Instructors will provide the primary information for the instructional level evaluation. A staff evaluator who assesses new programs may also be an information source. Information can be collected using formal and informal methods. Structured interviews and observation schedules are appropriate for collecting information from teachers. An instructor questionnaire may also be administered upon completion of any module or series of modules.

Learning Experience Level Evaluation. Evaluation at this level relates to what students gain as a result of having experienced the VECS program. The purpose of evaluation at this level is primarily to assess the degree to which students acquire the competencies required of a vocational education curriculum specialist. A secondary purpose is to determine the acceptability of the curriculum by the students. Considerations regarding the program and its materials include relevance, effectiveness, ease of use, adaptability to learner's needs, and interest level. Questions might include:

- Is the curriculum relevant for students with varied backgrounds?
- Is the curriculum relevant to the vocational interests of students?
- What do students gain in knowledge, skills, and attitudes as a result of the program? What do students gain relative to the intended outcomes of the program?
- Is the reading level and degree of complexity of student materials appropriate to the audience?
- Can students complete modules in designated time frames?
- Does the curriculum allow students to determine their own needs and influence their own instructional goals?
- Do learning materials suit student preferences?
- What is the interest level of student materials?

- Do students think the learning experiences are useful for developing real-world skills?

Primary sources of information for the learning experience level evaluation are instructors and students who have used the curriculum. If the institution has an evaluator on staff who assesses new programs, such an individual may also be a source of information.

Means of collecting information to answer questions may include both formal and informal methods. The student self-check may be used to determine what students gain in knowledge and skills as a result of the program. Attitude questionnaires or checklists may be used to assess changes due to the program. End of module questionnaires for instructors and students can be developed to assess actual teaching and learning experiences as well as individual likes and dislikes regarding the materials. Evaluation can include an observation schedule to monitor instructional activities. Informal methods of collecting information include unstructured interviews, and discussions with students and instructors.

APPENDIX A

MODULE CONTENT, EDUCATIONAL GOALS, AND PERFORMANCE OBJECTIVES

Introductory Modules

Module 1: The Scope of Vocational Education

Module 1 defines vocational education as it was conceived in 1917 and as it is currently perceived by educators and defined by legislation. It also explains how vocational education relates to general education, career education, community colleges, adult education, and special education. Module 1 ends with a summary of the growth of vocational education programs, the increasing effectiveness of vocational programs, its increasing financial needs, and the support of vocational education from federal, state, and local sources.

GOAL 1.1 ANALYZE AND INTERPRET THE MEANING OF VOCATIONAL EDUCATION IN TERMS OF LEGISLATION, PROGRAM, AND THE CONTEXT, OR ENVIRONMENT, IN WHICH VOCATIONAL EDUCATION IS FOUND.

- Objectives**
- 1.11 Define vocational education as it was conceived in 1917.
 - 1.12 Define vocational education as it is currently perceived.
 - 1.13 Define vocational education according to current legislation.
 - 1.14 Explain how vocational education relates to general education.
 - 1.15 Explain how vocational education relates to career education.
 - 1.16 Explain how vocational education relates to education in the community college.
 - 1.17 Explain how vocational education relates to adult education.
 - 1.18 Explain how vocational education relates to special education.

GOAL 1.2 SYNTHESIZE AND PRESENT THE PURPOSES AND FUNDAMENTAL CONCEPTS OF VOCATIONAL EDUCATION.

- Objectives**
- 1.21 Describe the major philosophic concepts of vocational education.
 - 1.22 Describe the major economic concepts of vocational education.
 - 1.23 Describe the major sociological concepts of vocational education.
 - 1.24 List the three basic objectives of vocational education.
 - 1.25 Define the basic objectives of vocational education by providing examples and descriptions of each.
 - 1.26 Explain the major contributions of vocational education to American society.
 - 1.27 Provide a written rationale of the need for vocational education in the future.

GOAL 1.3 PRESENT SUMMARY DATA ON THE GROWTH, OUTREACH, AND EFFECTIVENESS OF VOCATIONAL EDUCATION PROGRAMS.

- Objectives**
- 1.31 Compare past and present data regarding the numbers and kinds of people served by vocational education.
 - 1.32 List characteristics of the people served by vocational education.
 - 1.33 Describe vocational education enrollment at the various educational levels.
 - 1.34 Describe vocational education enrollment in the occupational areas served.
 - 1.35 Describe the financial support for vocational education from an historical viewpoint.
 - 1.36 Compare financial support for vocational education among federal, state, and local sources.
 - 1.37 Compare financial support of vocational education among the various educational levels.

Module 2: Roles of Vocational Educators in Curriculum Management

Module 2 analyzes six general functions in the management of a vocational education curriculum. It also identifies nine different types of personnel involved in curriculum management and the degree of involvement of each. The module stresses the ways in which curriculum management differs in a community college, a comprehensive high school, and an area vocational school.

GOAL 2.1 ANALYZE AND SUMMARIZE THE GOALS AND FUNCTIONS OF CURRICULUM MANAGEMENT IN VOCATIONAL EDUCATION.

- Objectives**
- 2.11 Define curriculum management.
 - 2.12 Identify the six general functions of vocational education curriculum management.
 - 2.13 Identify specific activities for each function of curriculum management.
 - 2.14 Identify four approaches to curriculum selection and organization for vocational education programs.

GOAL 2.2 EXPLAIN THE INVOLVEMENT OF DIFFERENT VOCATIONAL EDUCATION PERSONNEL IN CURRICULUM MANAGEMENT AND PRESENT A RATIONALE OF THE NEED FOR VOCATIONAL EDUCATION CURRICULUM SPECIALISTS.

- Objectives**
- 2.21 Identify nine different types of personnel involved in curriculum management.
 - 2.22 Estimate the degree of involvement for each type of personnel in curriculum management.
 - 2.23 Describe the major roles of each type of personnel in curriculum management.
 - 2.24 Identify the particular contributions a vocational education curriculum specialist can make in curriculum management.
 - 2.25 Describe the advantages and disadvantages of concentrating responsibility for a vocational education agency's curriculum management functions under one curriculum specialist.
 - 2.26 Identify three ways in which curriculum management differs in a community college, a comprehensive high school, and an area vocational school.

Module 3: Current Trends in Vocational Education

Module 3 describes how changes in the world of work affect vocational education and the accuracy of manpower forecasting. It also describes current knowledge about future employment opportunities and probable changes in the make-up of the work force. This module also discusses how cooperative work education, work experience education, work-study programs, and simulation programs can supplement classroom instruction. The module ends with a discussion of the special problems of vocational education in meeting the needs of disadvantaged students.

GOAL 3.1 ANALYZE AND SUMMARIZE HOW CHANGES IN THE WORLD OF WORK AFFECT VOCATIONAL EDUCATION; EXPLAIN THE RELATIONSHIP BETWEEN VOCATIONAL EDUCATION AND MANPOWER FORECASTING, AND THE DIFFICULTIES INVOLVED IN MAKING ACCURATE MANPOWER FORECASTS.

- Objectives**
- 3.11 State the most basic problem preventing vocational education from meeting the manpower needs of the nation.
 - 3.12 Describe how vocational education is generally affected during periods of recognized manpower shortage and during periods when the most acute manpower shortages have been met.
 - 3.13 Relate the value of manpower forecasting to the vocational education planning process.
 - 3.14 Identify four specific factors that make accurate manpower forecasting a difficult task.

GOAL 3.2 SYNTHESIZE CURRENT KNOWLEDGE ABOUT THE FUTURE OF WORK IN AMERICA AND PROJECTED CHANGES IN THE WORK FORCE.

- Objectives**
- 3.21 Specify the two major divisions of America's work force and determine which division has the greatest number of workers.
 - 3.22 Determine specific occupations for which there is and will be decreased demand due to technological advances.
 - 3.23 Determine specific occupations for which there is and will be increased demand.
 - 3.24 Identify the industry division in which employment has grown the fastest.
 - 3.25 Establish the trend in number of white-collar workers versus blue-collar workers.
 - 3.26 Determine the major occupational group in which women are employed.
 - 3.27 Identify the age group for which unemployment is the highest.
 - 3.28 Determine the difference in unemployment rates for blacks and whites.
 - 3.29 Determine the educational level of the majority of American workers.
 - 3.210 Determine the approximate number of women in the work force and the expected representation by 1980.

GOAL 3.3 ASSESS CURRENT CONCEPTS, VALUES, AND OBJECTIVES OF PROVIDING STUDENTS WITH JOB EXPERIENCE TO SUPPLEMENT CLASSROOM INSTRUCTION, NAMELY, COOPERATIVE WORK EDUCATION, WORK EXPERIENCE EDUCATION, WORK-STUDY PROGRAMS, AND SIMULATION.

- Objectives**
- 3.31 Define the following terms: cooperative education, work experience, work-study, simulation.
 - 3.32 List one benefit of cooperative education for each of the following: the school, the student, the employer, the community.
 - 3.33 List two specific ways in which the 1968 Amendments to the Vocational Education Act of 1963 aided cooperative vocational education programs.
 - 3.34 State the general conclusion of the Advisory Council on Vocational Education regarding the effectiveness of cooperative education programs.
 - 3.35 List two specific difficulties, or disadvantages, of cooperative education programs.
 - 3.36 Describe how simulation might enhance a cooperative vocational program.
 - 3.37 List the four basic parts of a simulation.

GOAL 3.4 PRESENT AND ANALYZE THE SPECIAL PROBLEMS OF VOCATIONAL EDUCATION IN MEETING THE NEEDS OF DISADVANTAGED STUDENTS AND QUESTION HOW WELL THESE NEEDS ARE BEING MET.

- Objectives**
- 3.41 Identify the percentage of "disadvantaged" in the American population.
 - 3.42 Define the term "disadvantaged" according to the Vocational Education Amendments of 1968.
 - 3.43 Identify the vocational education legislation that allocated funds specifically for the disadvantaged.
 - 3.44 List three reasons why only a small portion of the disadvantaged are being reached by vocational education.
 - 3.45 Review major policy recommendations of the National Advisory Council on Vocational Education regarding education of the disadvantaged.
 - 3.46 Explain the general attitude of three different minority groups toward vocational education programs.

Module 4: Organization of Vocational Education

Module 4 describes the underlying principles and philosophy of the administration of vocational education as well as the organization and funding of vocational education at the federal, state, and local levels of government. It also describes the purposes and relationships of the various institutional organizations that offer vocational programs. The module ends with a description of functions and responsibilities of advisory committees on the local, state, and national level.

GOAL 4.1 PRESENT, ANALYZE, AND SYNTHESIZE INFORMATION AND CONCEPTS OF THE ADMINISTRATIVE ORGANIZATION AND FUNDING OF VOCATIONAL EDUCATION AT THE FEDERAL, STATE, AND LOCAL LEVELS AND THE UNDERLYING PRINCIPLES AND PHILOSOPHY OF VOCATIONAL EDUCATION ADMINISTRATION.

- Objectives**
- 4.11 Identify the first federal agency concerned with the administration of vocational education.
 - 4.12 Compare the prestige and organizational status of the first federal agency for the administration of vocational education with that of the present federal agency.
 - 4.13 Determine the number of years the Federal Government has been involved in vocational education.
 - 4.14 List the organizations responsible for the administration of vocational education on the federal, state, and local levels.
 - 4.15 Identify the administrative level legally responsible for vocational education.
 - 4.16 Describe the highest hierarchal position for a state director of vocational education.
 - 4.17 Describe how state divisions of vocational education have traditionally been organized and how recent federal legislation for vocational education has affected this traditional organizational pattern.
 - 4.18 Describe the requirements of the Vocational Education Act of 1963 regarding the composition of a state board for vocational education.
 - 4.19 Identify the most common method for recruiting members for a state board for vocational education.
 - 4.110 Illustrate the typical organizational pattern for the administration of vocational education at the local level.
 - 4.111 State the purpose of federal funding for vocational education as of 1968.
 - 4.112 Review the specific occupational categories for which federal funding was first provided.
 - 4.113 Identify the most recent legislation that marked the turning point for increased federal funding of vocational education.
 - 4.114 Determine the ratio of federal-to-state funds required by VEA, Part B, for states to be eligible for federal funding.
 - 4.115 List the three basic requirements a state must meet to obtain federal funding for vocational education.
 - 4.116 Describe the purpose of a state plan for vocational education.
 - 4.117 Identify three specific planning requirements of the Vocational Education Amendments of 1968 for local educational agencies applying for federal funds.
 - 4.118 Identify a general principle of financing vocational education that was established by early federal legislation.
 - 4.119 List three general principles of vocational education administration established by early federal legislation that have persisted throughout the years.

GOAL 4.2 EXPLAIN THE PURPOSES AND RELATIONSHIPS OF THE VARIOUS INSTITUTIONAL ORGANIZATIONS THAT CONDUCT PROGRAMS OF VOCATIONAL EDUCATION, THE TYPES OF VOCATIONAL PROGRAMS OFFERED BY THESE ORGANIZATIONS, AND THE GENERAL CHARACTERISTICS OF STUDENTS ENROLLED IN THESE PROGRAMS.

- Objectives**
- 4.21 Identify three types of secondary school institutions that provide vocational education programs.
 - 4.22 Identify three types of postsecondary school institutions that provide vocational education programs.
 - 4.23 Compare and contrast the general characteristics of secondary vocational students with the general characteristics of postsecondary vocational students.
 - 4.24 Recognize the specific vocational programs for which enrollment is the greatest at the secondary and postsecondary levels.
 - 4.25 Identify the type of educational institution in which vocational education programs are most prevalent.
 - 4.26 Recommend types of secondary and postsecondary institutions most likely to offer the greatest variety of vocational education programs.
 - 4.27 List two reasons why vocational education usually begins in high school.
 - 4.28 State the three principal curricula offered in the high schools of the United States and the three principal curricula offered in the community colleges of the United States.
 - 4.29 Describe the basic arguments for and against the maintenance of separate vocational high schools.
 - 4.210 State the difficulties of private vocational schools in recruiting students.

GOAL 4.3 UNDERSTAND, ANALYZE, AND SUMMARIZE THE FUNCTIONS AND RESPONSIBILITIES OF NATIONAL, STATE, AND LOCAL ADVISORY COMMITTEES WITHIN THE ORGANIZATIONAL STRUCTURE OF VOCATIONAL EDUCATION.

- Objectives**
- 4.31 Describe the legislative requirements, if any, for local, state, and national advisory committees.
 - 4.32 Identify the role that national advisory committees have played in the development of recent vocational education legislation.
 - 4.33 Describe the organizations represented in the membership of the National Advisory Council on Vocational Education.
 - 4.34 List the three specific duties of a state advisory council.
 - 4.35 Describe three types of local advisory committees and the general role of each type.

Module 5: Legislative Mandates for Vocational Education

Module 5 explains the significance of early and contemporary federal legislation for vocational education. The module also describes the economic, political, professional, and social factors that provided the basis for and led to the enactment of the major pieces of vocational education legislation including the Smith-Hughes Act of 1917, the Vocational Education act of 1963, the Vocational Education Amendments of 1968, and the proposed Vocational Education Amendments of 1975-76.

GOAL 5.1 SUMMARIZE AND EXPLAIN THE SIGNIFICANCE OF EARLY AND CONTEMPORARY FEDERAL LEGISLATION FOR VOCATIONAL EDUCATION.

- Objectives 5.11 Given a descriptive statement of a significant piece of vocational education legislation, identify, with the help of reference material, the legislation to which the statement refers.
- 5.12 State the significance of the three major pieces of vocational education legislation, namely, the Smith-Hughes Act of 1917, the Vocational Education Act of 1963, and the Vocational Education Amendments of 1968.

GOAL 5.2 REVIEW AND SYNTHESIZE THE NATIONAL STUDY PANEL REPORTS THAT PROVIDED THE BASIS FOR THE THREE MAJOR PIECES OF VOCATIONAL EDUCATION LEGISLATION, NAMELY, THE SMITH-HUGHES ACT OF 1917, THE VOCATIONAL EDUCATION ACT OF 1963, AND THE VOCATIONAL EDUCATION AMENDMENTS OF 1968.

- Objectives 5.21 Identify the specific national study panel and its report that provided the basis for the Smith-Hughes Act of 1917.
- 5.22 Identify the specific national study panel and its report that provided the basis for the Vocational Education Act of 1963.
- 5.23 Identify the specific national study panel and its report that provided the basis for the Vocational Education Amendments of 1968.
- 5.24 List the economic, social, educational, and individual needs for vocational education as described by the Commission on National Aid to Vocational Education (1914), the Panel of Consultants on Vocational Education (1961-1962), and the Advisory Council on Vocational Education (1968).
- 5.25 Compare and contrast the needs for vocational education as identified by the Commission on National Aid to Vocational Education (1914), the Panel of Consultants on Vocational Education (1961-1962), and the Advisory Council on Vocational Education (1968).

GOAL 5.3 ANALYZE THE ECONOMIC, POLITICAL, PROFESSIONAL, AND SOCIAL FACTORS OF THE TIMES THAT LED TO THE LEGISLATIVE ENACTMENT OF THE SMITH-HUGHES ACT OF 1917, THE VOCATIONAL EDUCATION ACT OF 1963, THE VOCATIONAL EDUCATION AMENDMENTS OF 1968, AND THE PROPOSED VOCATIONAL EDUCATION AMENDMENTS OF 1975-76.

- Objectives 5.31 Identify the key economic, political, professional, and social factors that affected the enactment of the Smith-Hughes Act of 1917.
- 5.32 Identify the key economic, political, professional, and social factors that affected the enactment of the Vocational Education Act of 1963.
- 5.33 Identify the key economic, political, professional, and social factors that affected the enactment of the Vocational Education Amendments of 1968.
- 5.34 Describe the status and progress of current legislation in regard to the proposed Vocational Education Amendments of 1975-76.

Module 6: The Preparation of Vocational Educators

Module 6 begins with a description of four legislative acts that supported vocational teacher education. It describes the major components of most current teacher preparation programs and the activities which should be included in a complete program of vocational teacher education. The module also describes typical certification requirements for secondary vocational teachers, post-secondary vocational teachers, and vocational supervisors and administrators. The module ends with a description of the major needs for improving the process of preparing and certifying vocational educators, and suggests recent trends that should be encouraged and followed on the local and national levels.

GOAL 6.1 SUMMARIZE AND ANALYZE THE BACKGROUND OF VOCATIONAL TEACHER EDUCATION AND THE PRESENT PROGRAMS AND INSTRUCTIONAL PRINCIPLES OF VOCATIONAL EDUCATION.

- Objectives**
- 6.11 Identify four legislative acts that supported vocational teacher education.
 - 6.12 Define vocational teacher education.
 - 6.13 Differentiate between preservice and inservice education.
 - 6.14 Describe the general preparation programs for three different service areas.
 - 6.15 Name the four major components of most current teacher preparation programs.
 - 6.16 List those activities which should be included in a complete program of vocational teacher education.
 - 6.17 Identify at least four approaches to inservice education.
 - 6.18 List at least ten principles of vocational instruction.

GOAL 6.2 ASSESS PRESENT PRACTICES IN THE CERTIFICATION OF VOCATIONAL EDUCATORS.

- Objectives**
- 6.21 Define vocational teacher certification.
 - 6.22 Indicate the source of information that explains certification requirements of any given state.
 - 6.23 Describe typical certification requirements for secondary vocational teachers, post-secondary vocational teachers, and vocational supervisors and administrators.

GOAL 6.3 SYNTHESIZE THE MAJOR NEEDS FOR IMPROVEMENT IN THE PREPARATION AND CERTIFICATION OF VOCATIONAL EDUCATORS.

- Objectives**
- 6.31 Explain why teachers need a broad liberal education in addition to occupational competency.
 - 6.32 Describe the two organizational approaches for vocational teacher education in an institution of higher education.
 - 6.33 Identify two advantages of a unified department of vocational education.
 - 6.34 Explain two problems associated with the occupational experience requirement for vocational teachers.
 - 6.35 List two benefits to teachers derived from the occupational experience requirement.
 - 6.36 Name five groups of people with special needs that vocational teachers with additional training and experiences could conceivably assist.

GOAL 6.4 PRESENT AND EXPLAIN RECENT TRENDS IN THE PREPARATION OF VOCATIONAL EDUCATORS.

- Objectives**
- 6.41 Define competency-based teacher education.
 - 6.42 Describe the purpose of EPDA.
 - 6.43 Describe the recent educational emphasis upon education for vocational curriculum specialists.

Core Modules

Module 1: Important Differences Among Learners

Module 1 presents information on the variety of learner characteristics that are important in the learning process. It also describes ways of studying individual differences among learners and discusses how these differences can affect vocational education programs.

GOAL 1.1 PRESENT, ANALYZE, AND SYNTHESIZE INFORMATION ON THE WAYS IN WHICH LEARNERS MAY BE SIMILAR AND/OR DIFFERENT AND HOW THESE INDIVIDUAL CHARACTERISTICS ARE IMPORTANT IN THE LEARNING PROCESS.

- Objectives**
- 1.11 Indicate several reasons why knowledge of individual differences is important in vocational education planning.
 - 1.12 Describe many of the similarities that can occur among learners.
 - 1.13 Identify the developmental tasks of various age groups in the vocational education program.
 - 1.14 Specify several ways in which individual learners may differ.
 - 1.15 Explain why similarities and differences among learners are likely to occur.
 - 1.16 Analyze the role of the self concept in individual adjustment.
 - 1.17 Indicate how group membership can influence individual characteristics.
 - 1.18 Describe several methods of adjustment used by developing individuals.
 - 1.19 Explain several cautions that must be used when identifying individual differences.

GOAL 1.2 DESCRIBE THE WAYS OF STUDYING INDIVIDUAL DIFFERENCES AMONG LEARNERS.

- Objectives**
- 1.21 Specify the importance of systematic methods of gathering information about learners.
 - 1.22 Outline several cautions that must be used when studying individuals.
 - 1.23 Describe several formal and informal methods of gathering information about learners.
 - 1.24 Synthesize individual data for purposes of planning instruction for an individual learner.
 - 1.25 Identify individual problem areas for further study.
 - 1.26 Examine your own feelings about the learner being studied and identify any biases that might affect your judgment.

GOAL 1.3 STATE HOW INDIVIDUAL DIFFERENCES CAN AFFECT VOCATIONAL EDUCATION PROGRAMS.

- Objectives**
- 1.31 Describe some of the difficulties that can arise as a result of individual differences.
 - 1.32 Suggest several strategies for incorporating individual differences within vocational education programs.
 - 1.33 Analyze these strategies in terms of potential effect on vocational education programs.

Module 2: Learning Processes and Outcomes

Module 2 breaks down the learning process into individual acts of learning. It identifies behavior patterns that are evidence of verbal learning, motor learning, cognitive learning, as well as attitudinal changes. The module ends with a discussion of why each type of learning is critical to vocational education programs.

GOAL 2.1 UNDERSTAND HOW KNOWLEDGE OF LEARNING CONCEPTS CAN BE APPLIED IN THE PLANNING OF VOCATIONAL INSTRUCTION.

- Objectives
- 2.11 Develop a rationale for the understanding of learning principles by the vocational curriculum specialist.
 - 2.12 Define "learning" and explain why learning is the primary goal of instruction.
 - 2.13 Explain how learning concepts can help the vocational teacher to provide more effective instruction.
 - 2.14 Explain how knowledge of learning concepts can facilitate curriculum design and development.

GOAL 2.2 KNOW WHAT STEPS TAKE PLACE IN AN ACT OF LEARNING AND WHY EACH STEP IS IMPORTANT IN VOCATIONAL INSTRUCTION.

- Objectives
- 2.21 List the phases in an act of learning.
 - 2.22 Specify the process associated with each phase.
 - 2.23 Show, with examples, how each step is included in learning knowledge, skills, and attitudes in a vocational course.
 - 2.24 Specify the motivational functions of the vocational instructor and how various features of the learning situation can affect motivation.

GOAL 2.3 DESCRIBE THE IMPORTANCE OF EACH OF THE FOLLOWING CATEGORIES OF LEARNING OUTCOMES IN VOCATIONAL EDUCATION: VERBAL INFORMATION, INTELLECTUAL SKILLS, COGNITIVE STRATEGIES, ATTITUDES, AND MOTOR SKILLS.

- Objectives
- 2.31 Define each of these capabilities with regard to learning.
 - 2.32 Demonstrate how vocational instruction enhances each of these capabilities.
 - 2.33 Identify behavior patterns that are evidence of the development of each of the capabilities.

Module 3: Applying Knowledge of Learning Processes and Outcomes to Instruction

Module 3 describes how the characteristics of the learning process affect the goals and objectives of vocational education programs and classroom instruction. The module also describes in detail how to establish the conditions necessary for individual learning in the classroom. Special emphasis is given to techniques for individualizing classroom instruction to meet the individual needs of vocational students.

GOAL 3.1 KNOW WHAT INFLUENCES AFFECT THE GOALS AND OBJECTIVES OF VOCATIONAL EDUCATION PROGRAMS AND HOW INSTRUCTIONAL OBJECTIVES ARE DETERMINED AT THE CLASSROOM LEVEL.

- Objectives
- 3.11 Specify how the following influences help to determine program objectives in vocational education and how they have their influence: national priorities, state priorities, manpower needs, institutional goals.
 - 3.12 Specify how the following influences determine instructional objectives at the classroom level in vocational education, and how they have their influence: program objectives, teachers, students, parents.

GOAL 3.2 KNOW WHAT CONDITIONS MUST BE ESTABLISHED IN THE CLASSROOM TO SUPPORT VARIOUS LEARNING OUTCOMES.

- Objectives
- 3.21 Specify the characteristics of a good performance objective.
 - 3.22 Write a good performance objective for each type of learning outcome for use in a vocational course.
 - 3.23 Specify the conditions of learning that best support each type of learning outcome; illustrate with examples from vocational education.

GOAL 3.3 KNOW HOW TO PLAN INSTRUCTION TO ESTABLISH THE CONDITIONS NECESSARY FOR LEARNING.

- Objectives
- 3.31 Describe the following aspects of course planning: identification of multiple learning goals, arrangements of sequences of prerequisites.
 - 3.32 Explain how each aspect of course planning influences course structure in vocational education.
 - 3.33 Describe the events in a lesson; relate each to the appropriate learning step.
 - 3.34 Show, by example, how to plan for each event in a lesson in a vocational class.

GOAL 3.4 KNOW HOW TO DELIVER INSTRUCTION TO MEET INDIVIDUAL NEEDS.

- Objectives
- 3.41 List the assumptions that underlie group instruction; evaluate the validity of these assumptions.
 - 3.42 Show, by example, how vocational instruction can be individualized.
 - 3.43 Show, by example, how tutorial instruction and self-instruction can be realized in vocational education.

Module 4: Assessing Manpower Needs and Supply in Vocational Education

Module 4 begins with a description of the different manpower and economic analyses used to plan vocational education programs. Special attention is given to the purposes of and approaches for conducting job market analyses, manpower forecasting, and population needs analysis. Eight sources of employment statistics that directly affect the planning of vocational education programs are studied in detail.

GOAL 4.1 DEFINE AND DIFFERENTIATE BETWEEN THE TYPES OF MANPOWER AND ECONOMIC ANALYSES USED IN VOCATIONAL EDUCATION.

- Objectives**
- 4.11 Define task analysis.
 - 4.12 Define occupational analysis.
 - 4.13 Define job analysis.
 - 4.14 Define instructional analysis.
 - 4.15 Define population needs analysis.
 - 4.16 Define job market analysis.

GOAL 4.2 BE AWARE OF AND BE ABLE TO USE AT LEAST FIVE SOURCES OF EMPLOYMENT STATISTICS THAT DIRECTLY AFFECT THE PLANNING OF VOCATIONAL EDUCATION PROGRAMS.

- Objectives**
- 4.21 Describe the type of information that can be found in the Occupational Outlook Handbook.
 - 4.22 Describe the type of information that can be found in Tomorrow's Manpower Needs.
 - 4.23 Describe the type of information that can be found in The Occupational Outlook Quarterly.
 - 4.24 Describe the type of information that can be found in The National Planning Association.
 - 4.25 Describe the type of information that can be found in the Manpower Report of the President.
 - 4.26 Describe the type of information that can be found in the Vocational and Technical Education U.S. Office of Education Annual Report.
 - 4.27 Describe the information that can be found in Meeting Tomorrow's Manpower Needs.
 - 4.28 Describe the type of information that can be found in the Dictionary of Occupational Titles.
 - 4.29 Describe the type of information that can be found in the State Employment Services publications.

GOAL 4.3 EXPLAIN THE PURPOSES OF AND APPROACHES FOR CONDUCTING JOB MARKET ANALYSIS AND MANPOWER FORECASTING.

- Objectives**
- 4.31 Describe how employer surveys are conducted and used in vocational education.
 - 4.32 Describe how econometric studies are conducted and used in vocational education.
 - 4.33 Describe how job vacancy surveys are conducted and used in vocational education.
 - 4.34 Describe how extrapolation of trends surveys are conducted and used in vocational education.
 - 4.35 Describe how literature surveys are conducted and used in vocational education.

GOAL 4.4 EXPLAIN THE PURPOSE OF AND THE PROCEDURES FOR POPULATION NEEDS ANALYSIS.

- Objectives**
- 4.41 Describe how to assess national, regional, and local student needs and interests.
 - 4.42 Describe how to assess existing business and industrial training programs available in the community.
 - 4.43 Describe how to assess existing public and private education programs.

Module 5: Laying the Groundwork for Vocational Education Curriculum Design

Module 5 is designed to provide the student with experiences that will enable him to plan, write, and present an occupational program proposal. The first part of the module is concerned with the "pre-planning process" which includes reviewing and evaluating vocational programs, estimating needs, identifying alternatives for meeting needs, and making recommendations for future program development. The second part of the module explains how to conduct a preliminary program investigation. And finally, the last section of the module features suggestions and simulated group activities that demonstrate how to present program proposals to a curriculum approval board.

GOAL 5.1 EXPLAIN, ANALYZE, AND UTILIZE TECHNIQUES FOR PRE-PLANNING OF VOCATIONAL EDUCATION PROGRAMS.

- Objectives**
- 5.11 Review and evaluate the present status of vocational education programs.
 - 5.12 Estimate present and future vocational education program needs.
 - 5.13 Identify alternatives for meeting vocational education program needs.
 - 5.14 Make recommendations for present and future vocational education program development.

GOAL 5.2 CONDUCT A COMPLETE PRELIMINARY INVESTIGATION IN PREPARATION FOR INITIATING A NEW VOCATIONAL EDUCATION PROGRAM.

- Objectives**
- 5.21 Provide basic information for promoting a new occupational program including a complete job description, a rationale and justification for the program, and suggestion of sources for additional information about the occupation.
 - 5.22 Describe the employment picture related to a specific occupational program.
 - 5.23 Describe the current status of a specific occupational program in relation to the total vocational education program.
 - 5.24 Describe the economic considerations related to the occupational program.
 - 5.25 Describe personnel considerations relevant to program development.
 - 5.26 Describe work experience considerations related to program development.
 - 5.27 Describe any considerations related to union and/or community attitudes regarding the specific occupational program.

GOAL 5.3 COMPLETE THE PRE-PLANNING PROCESS FOR VOCATIONAL EDUCATION PROGRAM DEVELOPMENT THROUGH PROMOTION AND FOLLOW-THROUGH ACTIVITIES.

- Objectives**
- 5.31 Discuss the proposed occupational program with interested faculty and administrators.
 - 5.32 Discuss the proposed occupational program with educational decision makers.
 - 5.33 Present program to district/area curriculum planning committee.
 - 5.34 Form interim advisory committee.

Module 6: Selecting Instructional Strategies for Vocational Education

The first part of the module describes the characteristics of a variety of instructional strategies used to organize vocational education content to ensure that program objectives are met effectively and efficiently. It discusses different uses of the cluster approach, unit shops, work-study programs, and cooperative education programs. Next, the module describes the standards and criteria to use to select the most appropriate instructional strategy for a given group of students, a selected content area, and a particular geographic, economic, and social situation. The module ends with a description of the impact the school organization can have on the selection of instructional strategies.

GOAL 6.1 DESCRIBE THE CHARACTERISTICS OF A VARIETY OF INSTRUCTIONAL STRATEGIES FOR ORGANIZING VOCATIONAL EDUCATION PROGRAMS.

- Objectives 6.11 Describe the characteristics of the clusters, families, or common elements of occupations approach to vocational education.
- 6.12 Describe the characteristics of the pyramid cluster model, the vertical-hierarchical cluster model, and the functions of industry model in vocational education.
- 6.13 Describe the advantages of the pyramid cluster model, the vertical-hierarchical cluster model, and the functions of industry cluster model.
- 6.14 Identify five or more concerns associated with the development or operation of a cluster program in vocational education.
- 6.15 Develop guidelines for handling at least five different concerns in the development or operation of a cluster program in vocational education.
- 6.16 Describe the characteristics of the unit shop area of specialization approach to vocational education.
- 6.17 Describe the characteristics of the work-study approach to organizing vocational education programs.
- 6.18 Describe the characteristics of the cooperative approach to organizing vocational education programs.

GOAL 6.2 EXPLAIN AND USE SPECIFIC STANDARDS FOR SELECTING CURRICULUM EXPERIENCES FOR VOCATIONAL EDUCATION PROGRAMS.

- Objectives 6.21 Identify and use standards for validating curriculum content.
- 6.22 Identify and use standards for determining the relevance of curriculum content for vocational education programs.
- 6.23 Identify and use standards for determining the breadth and depth of vocational education curriculum.
- 6.24 Identify and compare designations of curriculum materials.

GOAL 6.3 COMPARE AND CONTRAST CURRICULUM SELECTION FOR DIFFERENT EDUCATIONAL LEVELS.

- Objectives 6.31 Identify and describe the unique characteristics of a vocational curriculum at the secondary level.
- 6.32 Identify and describe the unique characteristics of a vocational curriculum at the postsecondary level.

GOAL 6.4 ANALYZE AND DESCRIBE THE RELATIONSHIP OF CURRICULUM DESIGN TO THE ORGANIZATIONAL CONDITIONS UNDER WHICH IT FUNCTIONS.

- Objectives** 6.41 Recognize the formal and informal aspects of organization which influence curriculum selection.
6.42 Identify innovative curriculum characteristics that have implications for organization.

Module 7: Derivation and Specification of Instructional Objectives

This module describes the necessary preparatory steps for the systematic derivation of instructional objectives including writing a job description, listing the tasks for a given occupation, and determining the major characteristics of the target population. The module also describes the four components of instructional objectives: 1) a description of the target population; 2) the behavior or performance expected of the students; 3) the conditions under which the students are to perform; and 4) the standards or criteria of acceptable performance.

GOAL 7.1 PERFORM THE NECESSARY PREPARATORY STEPS FOR SYSTEMATIC DERIVATION OF INSTRUCTIONAL OBJECTIVES.

- Objectives** 7.11 Locate or write a job description for a given occupation.
7.12 List and detail the tasks for a given occupation.
7.13 Select given occupational tasks for school instruction.
7.14 Determine the major characteristics of the target population.
7.15 Determine course prerequisites.

GOAL 7.2 SPECIFY INSTRUCTIONAL OBJECTIVES.

- Objectives** 7.21 State the importance of specifying instructional objectives.
7.22 Given one component of an instructional objective, identify whether that component describes: 1) the target audience; 2) the specific behavior or performance expected of the student as a result of instruction; 3) the conditions under which the student is expected to behave or perform; 4) the standards or criteria of acceptable performance.
7.23 Given tasks for a specific occupation, develop instructional objectives for these tasks.
7.24 List five sources for obtaining existing objectives.

Module 8: Development of Instructional Materials

This module describes how to select instructional strategies (teaching methods and media devices) that are appropriate for each of the three domains of learning: cognitive, affective, and psychomotor. It also identifies the basic criteria and common principles for organizing and sequencing instruction. The module ends with a discussion on how to develop a lesson plan for a unit of instruction.

GOAL 8.1 SELECT INSTRUCTIONAL STRATEGIES (TEACHING METHODS AND MEDIA DEVICES) FOR ACCOMPLISHING INSTRUCTIONAL OBJECTIVES.

- Objectives**
- 8.11 Describe five general principles for the selection of learning experiences.
 - 8.12 Given a specific occupational task, identify the type of performance primarily associated with each step of the task.
 - 8.13 Identify teaching methods that are appropriate for each of the three domains of learning: cognitive, affective, and psychomotor.
 - 8.14 Given specific instructional objectives, select an instructional strategy for accomplishing each.
 - 8.15 Judge the quality of commercial instructional materials.

GOAL 8.2 ORGANIZE INSTRUCTION.

- Objectives**
- 8.21 Identify basic criteria and common principles of organizing instruction.
 - 8.22 Recognize ways of sequencing instruction.
 - 8.23 Develop a lesson plan for a unit of instruction.

Module 9: Testing Instructional Objectives

Module 9 describes the differences between norm-referenced measurement and criterion-referenced measurement on the basis of variability, item construction, reliability, validity, item analysis, and reporting and interpretation. It also describes how to assess student achievement of instructional objectives in the cognitive, affective, and psychomotor domains. Finally, the module describes how to develop an evaluation plan and test instruments for assessing student achievement of the instructional objectives for a given unit of instruction.

GOAL 9.1 UNDERSTAND THE CONCEPT OF CRITERION-REFERENCED MEASUREMENT WITHIN THE FRAMEWORK OF EDUCATIONAL EVALUATION.

- Objectives**
- 9.11 Define the following terms: educational evaluation, educational measurement, criterion-referenced testing, and norm-referenced testing.
 - 9.12 Identify the historical conditions that gave impetus to the use of criterion-referenced measurement.
 - 9.13 Given a specific characteristic, determine whether that characteristic describes a norm-referenced test or a criterion-referenced test.
 - 9.14 Distinguish between norm-referenced measurement and criterion-referenced measurement on the basis of: variability, item construction, reliability, validity, item analysis, and reporting and interpretation.
 - 9.15 State the possible shortcomings of commercially produced criterion-referenced tests.

GOAL 9.2 SELECT APPROACHES/TECHNIQUES FOR ASSESSING STUDENT ACHIEVEMENT OF INSTRUCTIONAL OBJECTIVES IN THE THREE DOMAINS OF LEARNING.

- Objectives**
- 9.21 Recognize appropriate techniques for assessing student achievement of instructional objectives in the cognitive, affective, and psychomotor domains.
 - 9.22 Identify the two basic types of written test questions and describe the advantages and limitations of each.
 - 9.23 Define the term "performance test" and specify basic procedures for testing performance.
 - 9.24 Select approaches/techniques for assessing student achievement of instructional objectives of a given unit of instruction.

GOAL 9.3 DEVELOP AN EVALUATION PLAN AND CONSTRUCT TEST INSTRUMENTS FOR MEASURING STUDENT ACHIEVEMENT OF INSTRUCTIONAL OBJECTIVES.

- Objectives**
- 9.31 Given an instructional objective stated in behavioral terms and a list of possible test items, identify those test items that would be appropriate for assessing the objective.
 - 9.32 Develop an evaluation plan for assessing student achievement of the instructional objectives for a given unit of instruction.
 - 9.33 Construct test instruments for assessing student achievement of the instructional objectives for a given unit of instruction.

Module 10: Fiscal Management of Vocational Education Programs

Module 10 begins with a discussion of how an accountability system can be implemented into a school system. Next, the basic characteristics of four fiscal management plans are explained. Finally, the module describes how to prepare the components of a proposal requesting funding of a program or project in vocational education.

GOAL 10.1 DESCRIBE THE CONCEPT OF ACCOUNTABILITY IN EDUCATION.

- Objectives**
- 10.11 Define the concept of accountability in education.
 - 10.12 Describe the role of the vocational curriculum specialist in the accountability system.
 - 10.13 List the four necessary components of an accountability system.

GOAL 10.2 DISCUSS FISCAL PLANNING AND MANAGEMENT SYSTEMS.

- Objectives**
- 10.21 Describe the basic characteristics for four fiscal management plans.

GOAL 10.3 DESCRIBE THE BASIC CHARACTERISTICS OF THE STATE PLAN FOR VOCATIONAL EDUCATION FOR THE STATE IN WHICH YOU RESIDE.

- Objectives**
- 10.31 Describe how federal funds are maintained and audited by the state.
 - 10.32 Describe the two main state criteria for allocating federal funds to state and local vocational education programs.
 - 10.33 State the percentage of federal funds made available for disadvantaged, handicapped, and postsecondary persons.
 - 10.34 List the instructional areas of vocational education recognized by your state.

GOAL 10.4 PREPARE THE COMPONENTS OF A PROPOSAL REQUESTING FUNDING OF A PROGRAM OR PROJECT IN VOCATIONAL EDUCATION.

- Objectives**
- 10.41 Prepare a statement of need.
 - 10.42 Prepare objectives that describe the outcomes of the program.
 - 10.43 Prepare a description of the topics to be covered in the program.
 - 10.44 Describe how to prepare a plan for evaluating the success of the program.
 - 10.45 Describe how to prepare a plan for the diffusion of the program.
 - 10.46 Prepare a description of the required personnel and facilities.
 - 10.47 Describe the three steps for preparing a description of the required budget.

Module 11: Introducing and Maintaining Innovation

This module studies in depth the process of dissemination, implementation, and utilization in the educational community. It describes four accepted models of dissemination, implementation, and utilization, and analyzes the attributes exhibited by programs that are most easily adopted. The module also describes the four common roles of the change agent, and how the change agent can organize his work so that successful innovation will occur.

GOAL 11.1 EXPLAIN THE PROCESS OF DISSEMINATION, IMPLEMENTATION, AND UTILIZATION AS A PROCESS OF CHANGE IN THE EDUCATION COMMUNITY.

- Objectives
- 11.11 Define the terms used in the study of dissemination and implementation of educational programs, including the following: change agent, client, dissemination, diffusion, implementation, innovation, user, and integrated approach.
 - 11.12 Describe the characteristics of people most likely to accept innovations.
 - 11.13 Explain how the Innovations Evaluation Guide can be used to evaluate the benefits and costs of potential innovations.
 - 11.14 List and describe at least five of the nine attributes exhibited by programs that are most easily adopted.
 - 11.15 Explain the difference between an integrated approach and a sequential approach to development and dissemination.
 - 11.16 Describe the four models of dissemination, implementation, and utilization.

GOAL 11.2 DESCRIBE HOW A CHANGE AGENT CAN ORGANIZE HIS WORK SO THAT SUCCESSFUL INNOVATION WILL TAKE PLACE.

- Objectives
- 11.21 Describe the four roles of the change agent.
 - 11.22 List and describe the six stages of the Havelock model of innovation and change.
 - 11.23 Describe the four considerations for establishing a successful first encounter with clients and the community.
 - 11.24 List the six danger signals that indicate a successful relationship may not be possible.
 - 11.25 Describe the three ways to diagnose a client's problem or need.
 - 11.26 Describe the nine mechanisms that can be used for acquiring information and relevant resources.
 - 11.27 Describe the four steps that should be completed before a solution to a particular problem is decided upon.
 - 11.28 List and describe the six phases in the process of individual adoption.
 - 11.29 Explain how the change agent can expedite each of the six phases of the adoption process.
 - 11.210 Describe six procedures to follow that help ensure that a program will be maintained.

Module 12: Managing Vocational Education Programs

Module 12 begins with a discussion of how to develop an administrative management plan for a new course: how to plan and select instructional facilities, purchase equipment, maintain an inventory of materials and equipment, prepare a budget, and select students and instructors. The module also describes the management requirements and characteristics of individualized instruction and group instruction.

GOAL 12.1 DEVELOP AN ADMINISTRATIVE MANAGEMENT PLAN FOR A NEW COURSE.

- Objectives
- 12.11 Describe how to establish a schedule of classes and teachers.
 - 12.12 Describe how to plan and select instructional facilities.
 - 12.13 Describe how to purchase equipment.
 - 12.14 Describe how to maintain an inventory of instructional materials and equipment.
 - 12.15 Prepare a plan for selecting instructors.
 - 12.16 Prepare a plan for selecting students.
 - 12.17 Describe how to prepare a budget for a course.

GOAL 12.2 STUDY A VARIETY OF CLASSROOM MANAGEMENT SYSTEMS

- Objectives
- 12.21 Describe the major management characteristics of individualized instruction and group instruction.
 - 12.22 Describe the basic classroom activities necessary for effective classroom management.
 - 12.23 Describe the management responsibilities of the instructor and the student.

Module 13: Basic Concepts in Educational Evaluation

Module 13 begins with a description of the social, political, and economic factors that have contributed to the development of the educational evaluation movement. It also describes the terminology used in educational evaluation and the similarities and differences between educational research and educational evaluation. The module describes four major types of evaluation and the criteria used most frequently in the evaluation of vocational education programs.

GOAL 13.1 BE AWARE OF THE SOCIAL, POLITICAL, AND ECONOMIC FACTORS THAT HAVE CONTRIBUTED TO THE DEVELOPMENT OF THE EDUCATIONAL EVALUATION MOVEMENT.

- Objectives**
- 13.11 Identify the major factors that have been characterized as educational evaluation in the past.
 - 13.12 Identify the major events and factors that have occurred in the last two decades that have had the most pronounced effect on the educational evaluation movement.

GOAL 13.2 BE FAMILIAR WITH THE TERMINOLOGY USED IN EDUCATIONAL EVALUATION.

- Objectives**
- 13.21 Define educational evaluation as it is presently conceptualized.
 - 13.22 Distinguish among terms that are commonly interchanged with evaluation but do not actually mean the same.

GOAL 13.3 BE AWARE OF THE SIMILARITIES AND DIFFERENCES BETWEEN EDUCATIONAL RESEARCH AND EDUCATIONAL EVALUATION.

- Objectives**
- 13.31 Explain the differences in techniques and purposes between educational research and educational evaluation.
 - 13.32 Distinguish between everyday educational evaluation activities and systematic educational evaluation.
 - 13.33 Distinguish among activities that are characterized as grading, measurement, research, and evaluation.

GOAL 13.4 BE AWARE OF THE QUALITIES AND KNOWLEDGE THAT EDUCATIONAL EVALUATORS MUST POSSESS AND THE ROLES THAT THEY MUST PLAY.

- Objectives**
- 13.41 Identify decision situations that require an evaluator's expertise.
 - 13.42 Identify the three major roles that evaluation specialists are required to play in a decision-making context.
 - 13.43 Identify the knowledge and skills that evaluation specialists must possess and use in their various roles.

GOAL 13.5 BE AWARE OF THE DIFFERENT CONCEPTIONS OF EDUCATIONAL EVALUATION AND THE PURPOSES FOR WHICH IT IS CONDUCTED.

- Objectives**
- 13.51 Identify the four major types or conceptions of educational evaluation.
 - 13.52 Distinguish among the purposes of the four general types of evaluation.
 - 13.53 List the characteristics that are part of all four types of educational evaluation.

GOAL 13.6 BE AWARE OF THE CRITERIA USED IN A DECISION-MAKING CONTEXT FOR THE EVALUATION OF VOCATIONAL EDUCATION PROGRAMS AND INSTRUCTIONAL INTERVENTIONS.

- Objectives**
- 13.61 List criteria that are commonly used in evaluations of vocational education.
 - 13.62 Distinguish among criteria used for evaluation of vocational education and other criteria.

Module 14: General Methods and Techniques of Educational Evaluation

Module 14 describes the purpose of the four major evaluation types and the role of the evaluator in each type of evaluation. It also describes the operational steps that are required in conducting an educational evaluation using each of the prominent types of evaluation. The evaluation criteria for vocational education are described in detail.

GOAL 14.1 BE AWARE OF THE PURPOSES AND COMPONENTS OF THE PROMINENT TYPES OR MODELS FOR EDUCATIONAL EVALUATION.

- Objectives**
- 14.11 State the overall purpose of each of the four major evaluation types.
 - 14.12 Define the role of the evaluator in each of the models or types of evaluation.
 - 14.13 List the operational steps that are required in conducting an educational evaluation using each of the prominent types of evaluation.
 - 14.14 Develop and list evaluative criteria for vocational education evaluation for each of the prominent evaluation types.
 - 14.15 Distinguish among activities that are characterized as goal attainment evaluation, judgmental evaluation emphasizing intrinsic criteria, judgmental evaluation emphasizing extrinsic criteria, and decision-facilitation evaluation.

Module 15: Procedures for Conducting Evaluations of Vocational Education

Module 15 begins by describing the various purposes and components of decision-facilitation evaluations. It then analyzes and interprets the roles that evaluators are required to assume when conducting decision-facilitation activities. The module also describes the appropriate criteria and methodology for decision-facilitation evaluations as well as the methods for preparing decision-facilitation evaluation plans and reports.

GOAL 15.1 BE AWARE OF THE VARIOUS PURPOSES AND COMPONENTS OF DECISION-FACILITATION EVALUATIONS.

- Objectives**
- 15.11 List the various phases of a decision-facilitation evaluation and state the purpose for each phase.
 - 15.12 List and give examples of the evaluator activities that are performed in the various phases of decision-facilitation evaluations.
 - 15.13 Specify the characteristics of each type of evaluation activity and how they are related to the other evaluation activities.

GOAL 15.2 ANALYZE AND INTERPRET THE ROLES THAT EVALUATORS ARE REQUIRED TO ASSUME WHEN CONDUCTING DECISION-FACILITATION ACTIVITIES.

- Objectives**
- 15.21 Identify the duties and functions of the persons responsible for conducting and/or supervising the various evaluation activities.
 - 15.22 Select the proper role of the evaluator in each of the decision contexts.

GOAL 15.3 BE AWARE OF AND BE ABLE TO DEVELOP OR USE APPROPRIATE CRITERIA AND METHODOLOGY FOR DECISION-FACILITATION EVALUATIONS.

- Objectives**
- 15.31 Identify the factors, or criteria, to consider in determining the procedures used for collecting decision-facilitation information for each of the several evaluation activities.
 - 15.32 Make informed decisions regarding the kinds of data to collect and the general methods used to collect, analyze, and report that data for each of the several evaluation activities.
 - 15.33 Select appropriate instruments for use in collecting evaluation information.

GOAL 15.4 BE AWARE OF THE METHODS FOR PREPARING DECISION-FACILITATION EVALUATION PLANS AND REPORTS.

- Objectives**
- 15.41 Identify the proper times during the course of an evaluation to submit reports to the project or program operators.
 - 15.42 Prepare an evaluation plan.
 - 15.43 Identify and prepare evaluation reports that will provide decision-makers with needed information about educational programs or projects.